BOC

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User manual BASELINE®.

BASELINE® cylinder and secondary pressure regulators

Models: C106/1, C106X/1, C106/2, C106X/2, R104/1

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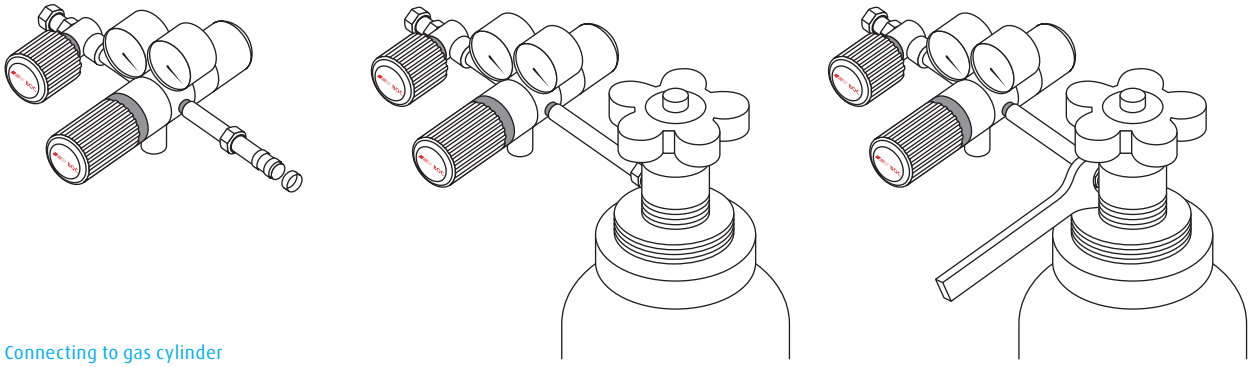

Connecting to gas cylinder

1. Area of application.

These operating instructions only apply to BASELINE® pressure control devices supplied by BOC, which accompany these instructions. These products are labeled with the manufacturer's name on the operating elements or by direct marking on elements of the pressure controlling parts. These pressure-controlling devices can also be integrated into systems. In which case the corresponding equipment-specific operating instructions apply together with these operating instructions.

2. Basic safety advice.

2.1 Obligations of the buyer

The buyer undertakes only to let persons operate pressure control devices, who are familiar with the basic principals and regulations on safety at work and accident prevention and have permanent access to these regulations, have read and understood the chapter on safety and the warning notices in these operating instructions and have been trained to use pressure control devices. Safety awareness among the users must be confirmed at regular intervals. The responsibilities for user assembly, start-up and operation are to be clearly defined. Personnel in training may only operate pressure control devices under the supervision of an experienced person. Always keep all safety and warning notices in a readable and accessible condition.

2.2 Obligations of the user

All persons whose job includes working with pressure control devices, undertake to pay attention to the basic rules and regulations on safety at work and accident prevention and to familiarize themselves with the safety regulations with regards to the gas being used, as well as these instructions.

2.3 Application as directed

The pressure control device is to be used exclusively to release gas-type media from pressurized containers or as a secondary control for gas piping systems. Any other use or extension of this purpose is not application as directed. Part of the application as directed is: paying attention to all notices in the operating instructions, complying with the service and maintenance work required and paying attention to the nameplates and the data sheets.

2.4 Explanation of warning notices

In the operating instructions the following signs are used:

Danger
This notice means an immediate threat of danger to life and the health of people. Failure to observe this notice can have serious health consequences as a result, including life-threatening injuries.

Warning
This notice means a possible threat of danger to life and the health of people. Failure to observe this notice can result in serious consequences to health including life-threatening injuries.

Caution
This notice warns of a possibly dangerous situation. Failure to observe can lead to minor injuries or lead to damage to property.

Notice
This notation provides important information on the correct handling of the pressure control devices and you will receive application tips and particularly useful information. Failure to observe can lead to malfunction of the pressure control devices or of the surroundings. Application tips help you to optimize your use of all the functions on your pressure control device.

2.5 Warranty and liability

This equipment is sold by BOC under warranties set forth in the following paragraphs. Such warranties are extended only with respect to the purchase of this equipment directly from BOC or its Authorized Distributors as new merchandise and are extended to the first Buyer thereof other than for the purpose of resale.

For a period of one (1) year from the date of original delivery (90 days if used in corrosive service) to Buyer or Buyer's order, this equipment is warranted to be free from functional defects in materials and workmanship and to conform to the description of this equipment contained in this manual and any accompanying labels and/or inserts, provided that the same is properly operated under conditions of normal use and that regular periodic maintenance and service is performed or replacements made in accordance with the instructions provided.

The foregoing warranties shall not apply if the equipment has been repaired, other than by BOC or a designated service facility or in accordance with written instructions provided by BOC, or altered by anyone other than BOC, or if the equipment has been subject to abuse, misuse, negligence or accident.

BOC sole and exclusive obligation and buyer's sole and exclusive remedy under the above guarantee is limited to repairing or replacing, free of charge, at BOC's option, the equipment or part, which is reported to it's authorized agent from whom purchased, and which if so advised, is returned with a statement of the observed deficiency, and proof of purchase of equipment or part not later than seven (7) days after the expiration date of the applicable guarantee, to the nearest designated service facility during normal business hours, transportation charges prepaid, and which, upon examination, is found not to comply with the above guarantee. Return trip transportation charges for the equipment or part shall be paid by buyer.

BOC shall not be otherwise liable for any damages including but not limited to: incidental damages; consequential damages, or special damages wheather such damages result from negligence; breach fo guarantee of otherwise.

There are no express or implied guarantee which extend beyond the guarantee herein above set forth. BOC makes no guarantee of merchantability or fitness for a particular purpose with respect to the equipment orparts thereof.

Furthermore what is stated under the paragraph guarantee in general conditions for the supply of plant and machinery for export, ECE188, shall be valid.

2.6 Particular danger from leakage

When using very hazardous, hazardous or slightly hazardous gases, danger to the operator and others can occur should a malfunction or leak develop. Malfunctions of the pressure equipment or operation of relief valves and safeties can result in the release of the hazardous gases into the work environment. When using hazardous gases take particular safety precautions, including sufficient ventilation or evacuation. Securely Pipe away the exits of pressure relief and purge valves. Any leaked materials are to be disposed of safely, in accordance with local regulations, and an environmentally friendly manner.

The operators are to be informed of the particular dangers of the gas they are using and of personal and other protection measures necessary for the safe operation of pressure equipment.

2.7 Information on special types of gas

All parts that come into contact with oxygen must be completely free of oil, grease and particular matter, to avoid danger of ignition and/or explosion! Where instructed to use a lubricant only use one with approval for oxygen service. When working with acetylene, do not use tubing or other parts made of copper! Know and pay attention to the particular dangers of these two and other reactive gases.

2.8 Design changes on the pressure control device

Without written permission from the manufacturer, no changes, extensions or redesign on the pressure control device or the equipment are to be carried out.

2.9 Cleaning the gas device and disposal of the residue

Do not contaminate the equipment with oily rags or grease. Do not clean with solvents.

3. Storage, transport.

All pressure equipment must be clean and stored in a dust free, dry and well-sealed environment. Do not use cleaning agents containing solvents! Before returning pressure equipment to the manufacturer it is absolutely necessary that all components be purged with inert gas, if they have been in contact with corrosive or toxic gases.

4. Technical data.

4.1 Data sheets

All technical data can be seen on the product specific data sheets for BASELINE® products. These are valid when used with the general operating instructions. Specifically, the data sheets contain the maximum intended inlet pressure, the working outlet range of the pressure device, the external dimensions, the leak integrity or tightness, and the permissible operating temperature range.

4.2 Pressure regulator series C106, C106X and R104

There are four R104 or six C106/C106X inlet and outlet ports with NPT 1/4" internal threads. Please always pay attention to the information contained in the “Connections” and “Start-up” sections for all products.

4.3 Cylinder regulators C106/1, C106X/1 and C106/2, 106X/2

Cylinder regulators are designed to be connected directly to gas cylinders to reduce cylinder pressure to a lower outlet pressure. The cylinder connections have different threads depending on the type of gas used. Do not use adapters or change cylinder connections.

4.4 Outlet valves

Cylinder regulators can be purchased with a type A multiple turn Diaphragm positive shutoff valve, type B multiple turn needle valve, or without an outlet valve. If a valve is installed, it is closed by turning the knob in the anticlockwise direction and opened by turning it in the clockwise direction.

5. Marking.

The nameplate lists the model number, Inlet fitting number and serial number of the pressure equipment as well as the manufacturers name.

Caution
Only use equipment that corresponds with the type of gas and operating pressures for which it was intended. The maximum intended inlet pressure is listed on the pressure equipment. Failure to observe the intended use can result in the danger of injury, the danger to life, the danger of equipment failure, or fittings being damaged.

6. Connection.

Cylinder regulators

Danger
Thread on cylinder valve and swivel nut must not show signs of damage, dirt, grease, oil, foreign matter or metal shavings.

Warning
Only use new gaskets. Gaskets must not be deformed, nor show traces of dirt or metal shavings.

Warning
Do not overly tighten the mounting fitting, as the thread and the gasket could be damaged. This can result in leakage, uncontrolled release of gas, or loss of the entire cylinder or gas supply contents.

Caution
Before connecting, check whether the equipment to be used is suitable for the planned application (type of gas, pressure, etc.)

Preparation
Only use regulators with cylinder connections that correspond to the type of gas and the valid national standards for cylinder connections.

Connecting to gas cylinder
1. Screw the swivel nut onto the valve connection on the cylinder by hand first. Pay attention the right-handed and left-handed threads! Align the pressure regulator. When mounting do not tilt!
2. Tighten the swivel nut with a suitable fork spanner.

Caution
Do not use a spanner extension as otherwise the gasket and the thread could be damaged. This can lead to leakage and uncontrolled release of the gas supply (complete loss of gas!).

Connecting the outlet tubes
Tubes are usually connected with compression fittings. Assembly is carried out by completely inserting the tube into the compression fitting. Then screw on the swivel nut by hand and tighten with a fork spanner (1 1/4 turn). Please pay attention to information provided by manufacturer as well as the suitability of the materials for certain gases and pressure ranges.

7. Start-up.

Danger
Before starting operation, check whether the pressure device to be used is suitable for the planned application purpose (type of gas, pressure, material, etc.)

Warning
Before switching on the pressure device ensure that no one can be endangered by starting operation of the pressure device.

Preparation
Ensure that all fittings and connections are tightly connected. Turn the hand-wheel of the regulator in an anti-clockwise direction until the end stop - this means that the gas flow is now stopped. Close all valves.

Process gas extraction
Slowly open the cylinder valve (shut-off valve on the pressurized gas container). Watch the inlet pressure gauge. Adjust the required outlet pressure by turning the regulator hand-wheel clockwise. Adjust the required flow on the regulating valve (if applicable).

8. Cylinder change.

Danger
When changing the cylinder used with toxic, corrosive, or hazardous gases, the appropriate protection measures are to be taken to protect personnel (breathing apparatus, eye protection and protective clothing as appropriate or required). Maximum permissible values of the concentration at the place of work must not be exceeded! Purge, vent, and or dispose of the residual gas contents of all toxic, corrosive, and hazardous gases in a safe and environmentally appropriate manner in accordance with local regulations.

Preparation
Tightly close the cylinder valve (on the pressurized gas container). Close the inlet valve on the regulator if so equipped. Completely empty the regulator. The pointers of the inlet pressure and outlet pressure gauges should indicate no internal pressure. Turn the hand-wheel of the regulator anticlockwise until the end stop (flow closed). Close the outlet valve.

Removal from cylinder
Using a suitable fork spanner, loosen the swivel nut from the cylinder valve connection. Pay attention that some connections are right-hand or left-hand threads. Support the regulator during removal. If escaping gas is noticed, reconnect the swivel nut and repeat the Preparation instructions again, making sure that the cylinder valve is closed.

9. Shutting down operations.

Caution
When dismantling as a general rule note: release pressure from regulator and tubing by venting the gas in a safe manner, the pointers of the inlet and outlet pressure gauges must indicate no internal pressure.

9.1 Cylinder regulator

For short stops in extraction of gas it is sufficient to close the shut-off valve on the regulator. In the case of longer stops, the regulator has to have the pressure released by turning the hand-wheel anti-clockwise. For safety reasons close the cylinder valve.

10. Maintenance and breakdowns.

10.1 Maintenance

The pressure control device should be examined regularly to make sure it is working correctly and to check for leaks. Prior to carrying out maintenance and service work, inform the operating personnel and the users. For all service and maintenance work, shutoff and secure all power to associated operating equipment and secure the main switch to prevent it from being turned back on. Check fittings, which have come undone for correct positioning. After completing maintenance work, make sure that all safety devices and installations are functional.

Danger
For safety reasons, repairs and or maintenance work to the BASELINE® pressure equipment, should only be carried out by BOC service companies or their authorized service personnel.

10.2 Malfunctions

By experience these regulators have a high level of reliability. Should any of the following breakdowns occur despite this, exchange the regulator and have the defective equipment repaired:

- Gas release at the outlet of the regulator when the hand-wheel is completely closed.
- Display of increasing pressure on the outlet pressure gauge when the valve is closed or no gas is flowing.
- Gas release at the regulator cover.
- Gas release at a gasket.
- Too high pressure drop with normal flow.
- Gas release at the pressure relief valve.
- Gas release at the pressure gauge.
- Pointer of a pressure gauge does not return to „0“.
- Faulty pressure display.

11. Return of pressure equipment.

Danger
Pressure equipment can only be returned with prior authorization. It must be completely depressurized, drained and purged with an inert gas. The packaging must be sealed gas-tight to prevent contamination or exposure during transport.

Danger
Pay attention to local rules and legislation with regards to transport and storage of hazardous goods and materials.

12. Manufacture.

BOC reserves the right to make technical enhancements/changes to its products at any time, without notice. BOC reserves all rights.

Getting ahead through innovation.

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